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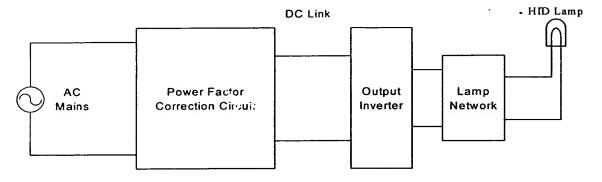


Fig. 1 Typical circuit configuration.

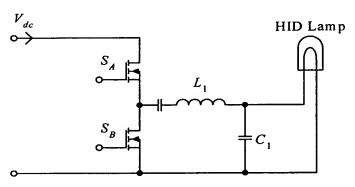


Fig. 2 Lamp network using L-C circuit. (Prior Art)

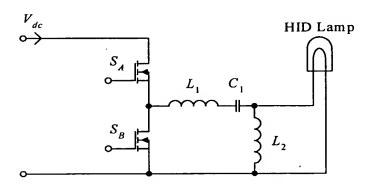


Fig. 3 Lamp network using L-C-L circuit. (Prior Art)

IEN

ICON

Temperature

Sensor

Inventor: HUI et al.

Detet No.: 12364.28USU1

NOVEL CIRCUIT DESIGNS AND CONTROL TECHNIQUE

HIGH

UENCY ELECTRONIC BALLASTS FOR HIGH INTENSITY

icy Name: Michael D. Schumann (Reg. No. 30,422)

Fritine No.: 612.336.4638

Sheet 2 of 3

Diode Bridge **PFC Circuit** Vdc EMI Filter Inductor Current Input Voltage Power Factor Profile Controller Output Voltage Inverter Vdc → S_{λ} Lamp network HID Lamp CI Ll Ignition ٧<u>.</u> Transistor Capacitor Driver S_B C2 L2 Co Long cable Peak de link current Delay Current sense Current Detection Controller b Isc,ref Input ISC Output vco Astable LOCK TEMP ISC ION

Fig. 4 Schematic diagram of the proposed ballast.

Timer

TEMP

Inventor: HUI et al.
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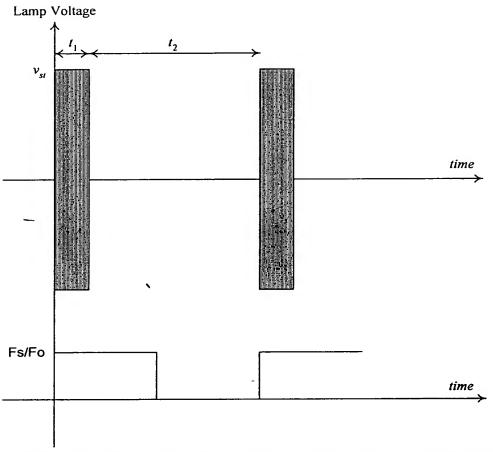


Fig. 4 Typical waveforms of the lamp voltage and Fs/Fo signal during the start-up process with root-mean-square voltage limiting feature.